REMARKS

Entry of the present amendments and consideration of the remarks which follow are respectfully requested by Applicants.

Claims 4-9 have been cancelled without prejudice. Claims 1, 3, 31, 52, and 59 have been amended. Claims 81 and 82 are new. Support for the amendment to claims 1, 31, 52, and 59 is found in Figure 6. Support for the amendment to claim 3 is found in Example 25. Support for new claims 81 and 82 is found in original claims 1 and 3. No new matter has been added.

Claims 1, 3, 21-22, 31, 33-37, 48-49, 52, 54, 56, 59, 66, 80, and 81 are currently pending for examination.

Inventorship

Applicants request amendment of inventorship due to amendment or cancellation of claims. Applicants request that the name of the person identified below be deleted from the list of inventors, and they acknowledge that the inventor's invention is no longer being claimed in this nonprovisional application. Please delete the following name:

Richard Terry Root

Information disclosure statement

The examiner notes that the citation of US 2003/010088 A1 on the IDS filed May 23, 2005 appears to be an incorrect citation and that the reference has not been considered.

Applicants remark that the correct citation is US 2003/0100088 (a "zero" was inadvertently omitted), which is a publication of S/N 10/192,052 of which the present application is a CIP. Applicants also note that a copy of that publication was submitted with the IDS filed on May 23, 2005.

Rejection under 35 USC §112, first paragraph

Claims 1, 3-9, 21, 22, 31, 33-37, 48, 49, 52, 54, 56, 59, and 66 have been rejected under 35 USC §112, first paragraph, because the specification, while being enabling for the preparation and use of activated lopinavir haptens wherein the point of attachment of the "X" moiety to the lopinavir moiety is through the hydroxy group as shown in Figure 6, structures 6 and 6A, does not reasonably provide

enablement for the preparation and use of activated haptens wherein the point of attachment is at any other position on the lopinavir moiety.

Applicants have now amended claims 1, 31, 52, and 59 to specifically recite the root structure of the claimed compound in the form shown in Figure 6 wherein the point of attachment of the variable moiety is through the hydroxy group on the lopinavir moiety. New claim 81 is based upon original claim 1 and also recites the root structure of the claimed compound in the form shown in Figure 6 wherein the point of attachment of the variable moiety is through the hydroxy group on the lopinavir moiety. The claims depending from claims 1, 31, 52, 59, and 81 are thus similarly amended. Applicants argue that the present amendments overcome the rejection, and the examiner's reconsideration of the rejection is respectfully requested by Applicants.

Rejection under 35 USC §112, first paragraph

Claims 1, 3-9, 21, 22, 31, 33-37, 48, 49, 52, 54, 56, 59, and 66 have been rejected under 35 USC §112, first paragraph, because the specification, while being enabling for the preparation of lopinavir-based activated haptens, tracers, and immunogens which contain a linker "L" and a group "–C(Y)-" (i.e., L is not defined as 0 carbon atoms and 0 heteroatoms; m is not defined as 0), does not reasonably provide enablement for the preparation of these activated haptens, tracers, and immunogens wherein no linker "L" and group "–C(Y)-" are present.

As now amended, "X" has been eliminated from the structure recited by claims 1, 31, 52, and 59. New claim 81 also does not recite "X". In claim 1 drawn to an activated hapten, Y is O, and m is 0. In new claim 81, also drawn to an activated hapten, Y is O, and m is 1. In both claims 1 and 81, A is an activated ester. In dependent claims 3 and 82, A is succinimido-oxycarbonyl. Claims depending from claims 1, 31, 52, and 59 have thus been amended accordingly. Applicants argue that the present amendments overcome the rejection, and the examiner's reconsideration of the rejection is respectfully requested by Applicants.

Rejection under 35 USC §112, second paragraph

Claims 1, 3-9, 21, 22, 31, 33-37, 48, 49, 52, 54, 56, 59, and 66 have been rejected under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

The examiner points out that the use of the term "selected from the group consisting of" in claims 1, 31, and 59 is inconsistent with the fact that the "group" consists of only one member, i.e., lopinavir. Applicants have amended the affected claims accordingly to eliminate the inconsistent recitation, and they respectfully request the examiner's reconsideration of the rejection. Applicants comment that new claim 81 also avoids the inconsistent recitation.

The examiner argues that claim 1 is indefinite and confusing for the reason that the limitation "lacking only a hydroxyl or an amino group" fails to adequately define exactly where the "X" moiety is attached to the lopinavir moiety. Applicants have now amended the affected claims accordingly to eliminate the indefinite recitation, and they respectfully request the examiner's reconsideration of the rejection. Applicants comment that new claim 81 also avoids the indefinite recitation.

Rejection under 35 USC §103 (a)

Claims 1, 3-9, 21, 22, 31, 33-37, 48, 49, 52, 54, 56, 59, and 66 have been rejected under 35 USC §103 (a) as being unpatentable over the admitted prior art as set forth in the specification in combination with Vierling et al., FR 98 00728 (hereinafter "Vierling") and optionally with Bieniarz et al, US 5,380,873 (hereinafter "Bieniarz"). The examiner argues that Vierling establishes that for a series of structurally related HIV protease inhibitors (p. 1, l. 26), the hydroxy group on the phenyl-CH_2-containing chain bridging two cyclic moieties is the reactive functional group. The claimed lopinavir structure also contains the same hydroxy group on the phenyl-CH_2-containing chain bridging two cyclic moieties which would similarly be expected to be the reactive functional group (Fig. 6, structures 6 and 6A in present application). The examiner further argues that the specification establishes that conventional methods for preparing activated haptens used in the preparation of immunogens, tracers, and hapten-specific antibodies are well known in the art. The prior art methods prepare activated haptens which include moieties of the type "-X-$(C{=}Y)_m$-L-A" depicted in claim 1 (paragraphs [0047] – [0055]). Bieniarz (considered to be cumulative of the admitted prior art of the specification) also establishes that linker-functional groups of the type depicted in claim 1 are well known in the art (Example 6 and Figs. 12-15). The examiner further argues that, given the fact that lopinavir is a well known drug, it would be obvious to make the corresponding antibody to this drug in accordance with the reasoning set forth in Ex parte Erlich, 3 USPQ2d 1011 (1987), in particular paragraph [5] of page 1016. The examiner's position is that one skilled in the art would be motivated to use the admittedly known, conventional preparation methods for the preparation of the activated drug haptens, immunogens, tracers, and corresponding antibodies using the hydroxy group on the lopinavir moiety as a point of attachment for the linker-functional group

as claimed since this hydroxy group has been well established as the reactive functional group for HIV protease inhibitors of the claimed type.

Applicants argue that there is no motivation to combine the prior art as set forth in Applicants' specification with that of Vierling and optionally with Bieniarz. Applicants point out that the teaching of Vierling deals with prodrugs, i.e., drugs that are designed to be unstable in the body (i.e., to release the drug after ingestion by a patient). Thus, the skilled artisan would not be motivated to use the teachings of Vierling to make stable compounds. Such analogous compounds would be expected to fall apart. It was therefore quite surprising that the compounds of Applicants are stable and thus useful as haptens, immunogens, conjugates, and tracers when one considers that the same ester linkage is used by Vierling to generate compounds designed to be unstable. The Bieniarz reference teaches different linker groups and also does not provide motivation to make the compounds of the instant invention. For these reasons, Applicants argue that the case for *prima facie* obviousness has not been made, and they respectfully request the examiner's reconsideration of the rejection with regard not only to the rejected claims, but also with regard to new claims 81 and 82, to which Applicants' comments also apply.

Applicants submit that their application is now in condition for allowance, and favorable reconsideration of their application in light of the above amendments and remarks is respectfully requested. Allowance of claims 1, 3, 21, 22, 31, 33-37, 48, 49, 52, 54, 56, 59, 66, 80, and 81 at an early date is earnestly solicited.

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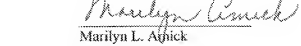
The examiner is hereby authorized to charge any fees associated with this Amendment to Deposit Account No. 02-2958. A duplicate copy of this sheet is enclosed.

Respectfully submitted,



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